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Docket No.: 06727/0204286-US0
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Menachem Nathan et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: Concurrently Herewith

Art Unit: N/A

For: THREE-DIMENSIONAL THIN-FILM
MICROBATTERY

Examiner: Not Yet Assigned

FIRST PRELIMINARY AMENDMENT

MS PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

Prior to examination on the merits, please amend the above-identified U.S. patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 7 of this paper.

AMENDMENTS TO THE SPECIFICATION

Following the title, please insert the following paragraph:

Cross-reference to Prior Application

The above-referenced application is the U.S. National Phase of International Patent Application PCT/IL2004/000945, filed October 14, 2004, which claims priority from U.S. Provisional Application No. 60/511,382, filed October 14, 2003, which is incorporated by reference herein. The International application was published in English on April 21, 2005 as WO 2005/036711 A2.

AMENDMENTS TO THE CLAIMS

1. (Canceled).

2. (Currently amended) The device according to ~~claim 1~~ claim 77, wherein the MCP comprises a plurality of tubes, which are fused together and cut to define the MCP, the tubes having lumens, which define the channels.

3-18. (Canceled).

19. (Currently amended) An electrical energy storage device, comprising:
a substrate having a multiplicity of cavities formed therein, the cavities having an aspect ratio greater than one and having surface areas; and
thin films formed over the surface areas and defining an anode, a cathode, and a solid electrolyte disposed between the anode and the cathode, the thin films comprising a final layer, which is formed so as to fill the ~~channels~~ cavities.

20. (Original) The device according to claim 19, wherein the substrate comprises at least one of a non-conductive material, a semiconductor material, and a conductive material.

21. (Currently amended) The device according to claim 19 ~~or 20~~, wherein the substrate has top and bottom surfaces, and wherein the cavities are formed so as to pass through the substrate from the top to the bottom surface.

22. (Currently amended) The device according to ~~any of claims 19 or 20~~ claim 19, wherein the substrate has top and bottom surfaces, and wherein the thin films are further formed over at least one of the top and bottom surfaces.

23. (Currently amended) The device according to ~~any of claims 19 or 20~~ claim 19, wherein the thin films comprise at least one current collector layer.

24. (Currently amended) The device according to ~~any of claims 19 or 20~~ claim 19, wherein the solid electrolyte comprises a hybrid polymer electrolyte.

25-34. (Canceled).

35. (Original) An electrical energy storage device, comprising:
a tube, having a channel passing therethrough, the channel having a surface area; and thin films formed over the surface area and defining an anode, a cathode, and a solid electrolyte disposed between the anode and the cathode.

36-37. (Canceled).

38. (Currently amended) A microelectronic device, comprising:
a microcircuit;
a substrate having a multiplicity of cavities formed therein, the cavities having an aspect ratio greater than one and having surface areas; and
thin films formed over the surface areas and defining an anode, a cathode, and a solid electrolyte disposed between the anode and the cathode, the thin films comprising a final layer, which is formed so as to fill the ~~channels~~ cavities, the thin films being coupled to provide electrical power to the microcircuit.

39. (Original) The device according to claim 38, wherein the microcircuit is disposed on the substrate.

40-42. (Canceled).

43. (Currently amended) The device according to ~~claim 42~~ claim 78, wherein the MCP comprises a plurality of tubes, which are fused together and cut to define the MCP, the tubes having lumens, which define the channels.

44-59. (Canceled).

60. (Currently amended) A method for fabricating an electrical storage cell, comprising:
providing a substrate having a multiplicity of cavities formed therein, the cavities having an aspect ratio greater than one and having surface areas; and
forming thin films over the surface areas so as to define an anode, a cathode, and a solid electrolyte disposed between the anode and the cathode, the thin films comprising a final layer, which is formed so as to fill the ~~channels~~ cavities.

61. (Original) The method according to claim 60, wherein the substrate comprises at least one of a non-conductive material, a semiconductor material, and a conductive material.

62. (Currently amended) The method according to claim 60 ~~or 61~~, wherein the substrate has top and bottom surfaces, and wherein the cavities are formed so as to pass through the substrate from the top to the bottom surface.

63. (Currently amended) The method according to claim 60 ~~or 61~~, wherein the substrate has top and bottom surfaces, and wherein forming the thin films further comprises forming the thin films over at least one of the top and bottom surfaces.

64. (Currently amended) The method according to claim 60 ~~or 61~~, wherein the thin films comprise at least one current collector layer.

65. (Currently amended) The method according to claim 60 ~~or 61~~, wherein the solid electrolyte comprises a hybrid polymer electrolyte.

66-75. (Canceled).

76. (Original) A method for fabricating an electrical storage cell, comprising:
providing a tube having a channel passing therethrough, the channel having a surface area; and

forming thin films over the surface area so as to define an anode, a cathode, and a solid electrolyte disposed between the anode and the cathode.

77. (New) The device according to claim 19, wherein the substrate comprises a microchannel plate (MCP) having channels formed therein, which serve as the cavities.

78. (New) The method according to claim 60, wherein the substrate comprises a microchannel plate (MCP) having channels formed therein, which serve as the cavities.

REMARKS

This application contains claims 1-78. Claims 1, 3-18, 25-34, 36, 37, 40-42, 44-59 and 66-75 have been canceled without prejudice. Claims 2, 19, 21-24, 38, 43, 60 and 62-65 have been amended. New claims 77 and 78 are hereby added. No new matter has been introduced. Favorable consideration of the claims is respectfully requested.

New dependent claims 77 and 78 are based respectively on original independent claims 1 and 42, which have been canceled. Applicant has amended claims 2 and 43 to depend from these new claims. Claims 19, 21-24, 38, 60 and 62-65 have been amended in order to correct typographical errors and remove multiple dependencies.

Applicant has canceled claims 1, 3-18, 25-34, 36, 37, 40-42, 44-59 and 66-75 at present in order to reduce excess claim charges and reserves the right to reintroduce these claims in the course of prosecution of this application or in a continuation.

All of the claims now pending in this application are believed to be in condition for allowance. Prompt notice to this effect is requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: April 12, 2006

Respectfully submitted,

By 

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